CLAIMS

We claim:

1. A method of removing drill cuttings from the drilling mud of a drilling mud system of an oil and gas well drilling rig, comprising the steps of:

   a) providing a plurality of collapsible storage bags;

   b) separating drill cuttings from the drilling mud;

   c) then, transporting the drill cuttings so separated to a compactor;

   d) then, compacting the drill cuttings so separated into a plurality of discrete compacted bodies of a substantially uniform size;

   e) then, filling each of said storage bags with said discrete compacted bodies of drill cuttings; and

   f) then, delivering said filled storage bags to a desired end location.

2. The method as recited in claim 1, wherein said drilling mud is delivered to a drilling mud storage tank after said step of separating said drill cuttings from the drilling mud is completed.

3. The method as recited in claim 2, wherein each of said storage bags is supported on a bag rack when each of said storage bags is filled with said discrete compacted bodies of drill cuttings.

4. The method as recited in claim 2, wherein any fluids produced from said step of compacting the so separated drill cuttings is conveyed to said mud storage tank.

5. The method as recited in claim 4, wherein said compactor in said step of transporting said the drill cuttings so separated to a compactor includes an extruder.

6. The method as recited in claim 4, wherein said compactor in said step of transporting said the drill cuttings so separated to a compactor includes a briquetting machine.

7. The method as recited in claim 3, wherein said storage bags are made of PVC.

8. The method as recited in claim 3, wherein said step of filling said storage bags comprises the additional the steps of :

a) providing a conveyor for receiving said discrete compacted bodies of drill cuttings from said compactor;

b) conveying said discrete compacted bodies of said drill cuttings to said storage bags; and

c) allowing said discrete compacted bodies to fall off said conveyor into each of said storage bags and thereby filling each of said storage bags.

9. The method as recited in claim 5, wherein said extruder crushes and compresses said drill cuttings at a range of pressures between 300 psi to 500 psi.

10. The method as recited in claim 9, wherein said extruder extrudes compacted bodies of said drill cuttings having a diameter in the range of about 3/8 of an inch to about 3/4 of inch.

11. An apparatus for processing drill cuttings collected from the drilling mud system of a drilling rig comprising:

(a) a separator means for separating drill cuttings from the drilling mud to produce a quantity of separated drill cuttings;

(b) a compactor means;

(c) a means for transporting said separated drill cuttings to said compactor means for crushing and compacting said separated drill cuttings into discrete massed bodies of drill cuttings;

(d) at least one storage bag for storing said discrete massed bodies of drill cuttings;

(e) a means for conveying said discrete massed bodies of drill cuttings from said compactor means to said storage bag; and

(f) a means for filling said storage bag with said discrete massed bodies of drill cuttings.

12. The apparatus as recited in claim 11, wherein said separator means includes:

(a) a conduit for delivering drilling mud and drill cuttings to a first cuttings separating means; and

(b) a conduit for returning drilling mud from said first cuttings separating means to the drilling mud system of the drilling rig.

13. The apparatus as recited in claim 12, wherein said means for separating said drill cuttings from said drilling mud includes:

(a) a conveyor for delivering said drill cuttings that have been separated from the drilling mud by said first cuttings separating means to a second cuttings separating means before said separated cuttings are conveyed to said compactor means; and

(b) a conduit for returning drilling mud from said second cuttings separating means to the drilling mud system of the drilling rig.

14. The apparatus as recited in claim 12 wherein, said first cuttings separating means is a vibratory screen shaker.

15. The apparatus as recited in claim 13 wherein, said second cuttings separating means is a centrifugal screen.

16. The apparatus as recited in claim 11 further comprising a drilling mud return line from said compactor means to the drilling mud system of the drilling rig.

17. The apparatus as recited in claim 16 further comprising a rack for supporting each of said bags while each of said bags is being filled with said discrete massed bodies of drill cuttings.

18. The apparatus as recited in claim 17 wherein said compactor means is an extruder.

19. The apparatus as recited in claim 17 wherein said compactor means is a briquetting machine.

20. The apparatus as recited in claim 18 wherein, said extruder produces pellets having a diameter of about 3/8 of an inch to about 3/4 of an inch.

21. The apparatus as recited in claim 19 wherein, said briquetting machine produces briquettes of about 3/4 of an inch to about 1-1/2 inches in width, of about 1 inch to about 2-1/2 inches in length and of about 1/2 of an inch to about 1 inch in thickness.

22. A method for handling solids retained in a liquid slurry comprising:

(a) providing a means for separating solids from the liquid slurry;

(b) providing a compactor means for crushing and compacting said solids so separated from said liquid slurry into discrete massed bodies;

(c) transporting said solids so separated from said liquid slurry to said a compactor means;

(d) crushing and compacting said solids into discrete massed bodies of said separated solids;

(e) providing at least one storage bag for storing said discrete massed bodies of said separated solids;

(f) conveying said discrete massed bodies of said separated solids from said compactor means to said storage bag;

(g) filling said storage bag with said discrete massed bodies of said separated solids; and

(h) transporting said filled storage bag to a desired end location.

23. The method as recited in claim 8, further comprising the step of adding a bonding agent to said compactor along with the drill cuttings so separated to said compactor so as to facilitate compacting the drill cuttings so separated into a plurality of discrete compacted bodies of a substantially uniform size.

24. The method as recited in claim 22, further comprising the step of adding a bonding agent to said compactor along with said solids so separated from said liquid slurry to said compactor means so as to facilitate crushing and compacting said solids into discrete massed bodies of said separated solids.

25. A method of disposing drill cuttings produced from the drilling mud of a drilling mud system of an oil and gas well drilling rig, comprising the steps of:

a) providing a plurality of collapsible storage bags;

b) separating drill cuttings from the drilling mud;

c) filling each of said storage bags with said drill cuttings so separated; and

d) then, delivering each of said storage bags so filled to a desired end location.

26. The method as recited in claim 25, wherein each of said storage bags is

supported on a bag rack when each of said storage bags is filled with said drill cuttings so separated.

27. The method as recited in claim 26, wherein said drilling mud is delivered to a drilling mud storage tank after said step of separating said drill cuttings from the drilling mud is completed.

28. The method as recited in claim 26, further comprising the additional step compacting said drill cuttings so separated into a plurality of discrete compacted bodies of a substantially uniform size prior to the step of filling each of said storage bags with said drill cuttings so separated.

29. The method as recited in claim 28, wherein the step of compacting said drill cuttings so separated includes extruding said drill cuttings so separated with an extruder.

30. The method as recited in claim 28 wherein the step of compacting said drill cuttings so separated includes compressing said drill cuttings so separated into briquettes by means of a briquetting machine.

31. The method as recited in claim 28 wherein each of said plurality of storage bags is reusable.